

Technical Memorandum

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Via Email: jfitch@scarboroughmaine.org
To: Jami Fitch, Town of Scarborough
From: Leila Pike, P.E. (GEI), Ilan Gasko, E.I. (GEI)
Date: March 27, 2025
Re: Data Review Memo
Flood Vulnerability Assessment
Scarborough, Maine
Project No.: 2403961

GEI Consultants, Inc. presents this memo summarizing data reviewed that will be used to evaluate flood risk as part of the flood vulnerability assessment for the Town of Scarborough, Cumberland County, Maine (the “Town”) (Figure 1). This work was based on Task 2.1 of our proposal dated April 1, 2024.

The flood vulnerability assessment will evaluate flood risk to assets (i.e., roads, pump station, structures, etc.) based on flood inundation boundaries that represent a range of coastal storm surge and sea level rise scenarios. The inundation extents will be created using a digital elevation model (DEM) representing the topography of the Town and water levels representing flood scenarios that will be included in the study. The risk of flood exposure for the assets included in the study will be based on their elevation and location relative to the inundation boundaries. Additional flood exposure due to inland flooding from heavy precipitation events and wave action during coastal storm scenarios will be considered for this study to the extent that existing data is available.

Data sources reviewed as part of the flood vulnerability assessment to develop the DEM, water levels, and GIS data include information from the National Oceanic and Atmospheric Agency (NOAA), the United States Geological Survey (USGS), the Federal Emergency Management Agency (FEMA), the Maine Climate Council (MCC) Scientific and Technical Subcommittee, readily available GIS data from Maine government websites and the Town of Scarborough, past flood inundation studies, and historical flood observations. These sources were consulted to develop flood scenarios and inundation boundaries for the flood vulnerability assessment.

Elevations in this report are referenced to the North American Vertical Datum of 1988 (NAVD88) in feet unless otherwise specified. Elevations in feet NAVD88 for the Town of Scarborough can be converted to elevations referenced to Mean Lower-Low Water (MLLW), which is often used on navigational charts, by adding 4.9 ft. For example, an elevation within this document of 8.8 ft NAVD88 would be the same as 13.7 ft referenced to MLLW.

1. Topography Data

The latest readily available Light Detection and Ranging (LiDAR) data for the Town of Scarborough is the USGS South Coastal Maine dataset (USGS, 2020). The data for this study was collected between May 17, and June 10, 2020. Changes to the topography in Scarborough that occurred after these dates, such as to dune profiles (either through erosion or restoration work) or to shoreline infrastructure (i.e. new seawalls or revetments), would likely not be represented in this terrain. The LiDAR survey was downloaded as a DEM with a horizontal resolution of 1-meter using the River Analysis System Mapper (RAS-Mapper) program with elevations referenced to NAVD88 in feet (USACE, 2023).

New LiDAR data along the coast of Maine is expected to be made publicly available in 2024 and will be released in three areas: Downeast Maine, Midcoast Maine, and Southern Maine. LiDAR for Southern Maine will become available after the others have been made public. Due to the unknown timing of the upcoming LiDAR availability, we will use the 2020 USGS LiDAR for South Coastal Maine, discussed above, for this study. Depending on the timing of the release of the new LiDAR to the public, we may be able to update the flood exposure study during the course of this project.

In addition to the publicly available LiDAR data, a digital surface representing proposed road elevations along Route 1 and Route 9 will be incorporated into the DEM. These proposed road elevations were developed as part of the Maine Department of Transportation (Maine DOT) U.S. Route 1 and Route 9 adaptation project.

As-built survey information from the Prouts Neck Seawall and Dune Restoration project from March 1, 2024 is available and will be referenced when creating inundation extents (GEI, 2024).

A DEM of the Town of Scarborough for use in the flood vulnerability assessment was created by merging the USGS South Coastal Maine LiDAR dataset with the digital surface representing the proposed Route 1 and Route 9 roadway elevations.

2. GIS Asset Data

Town GIS data and State-maintained GIS data were reviewed for use in the flood vulnerability assessment. We compiled a GIS database of assets to be included in the flood vulnerability assessment using data provided by the Town of Scarborough and publicly available data sources. The compiled GIS data represents a snapshot in time from the latest update of the database of locations and configurations for assets, such as roads, parcels, and building footprints, and may not reflect the existing conditions. The compiled GIS data has been organized into asset categories. The asset categories and corresponding GIS data are summarized in Table 2-1. A detailed list of file names, sources, and dates that data was accessed can be found in Appendix A.

Table 2-1. GIS Asset Data

Asset Category	GIS Data
Buildings and Parcels	Buildings; Parcels
Coastal Infrastructure	Boat Launches; Coastal Structures

Asset Category	GIS Data
Conservation and Recreational Assets	Beaches; Parks and Open Spaces; Sand Dunes; Walking Trails; Wetlands
Drainage Infrastructure	Catch Basins; Culverts; Dam; Detention Ponds; Outfalls; Outlet Control Structures
Public Safety	DEP Registered Tanks; DEP Remediation Sites; Evacuation Routes; Fire Hydrants; Municipal Safety; Streetlights; Wells
Sewer Infrastructure	Manholes; Parcels with Septic; Pump Stations; Wastewater Treatment Plan
Transportation Infrastructure	Bridges; Parking Lots; Railroads; Roads; Sidewalks

Note: See Appendix A for a list of GIS data sources

The following assets were included in the database but were outside the area of coastal flood extents included in this study, and therefore, not included in the flood vulnerability study: utility substations, hospitals, police stations, schools, and electric vehicle charging stations.

3. Water Levels

3.1 Tidal Datums and Stillwater Elevations

Water levels reviewed for use in the flood vulnerability assessment include mean higher-high water (MHHW), highest astronomical tide (HAT), the max recorded water level (Max Tide), and coastal storm surge stillwater elevations. These water elevations represent stillwater conditions (i.e., no wave action).

MHHW is the average of the higher high-water height of each tide cycle. The MHHW value can be considered an approximate elevation which the tide would reach most days. HAT is the highest astronomical tide predicted to occur at a specific tide station. Measured water levels at the Portland NOAA tide gage typically meet or exceed the HAT value monthly. The current HAT for Scarborough is based on the period from the year 2000 to 2040. Max Tide is the maximum recorded water elevation from a tide gage station.

The MHHW and HAT elevations for the Town of Scarborough were obtained from the NOAA Tide Gage Station 8418445, Pine Point, ME (NOAA, 2024a). The Max Tide was obtained from the NOAA Tide Gage Station 8418150, Portland, ME (NOAA, 2024b). Max Tide at the NOAA Portland Tide Gage was recorded during the January 13, 2024 event. See Table 3-1 for a summary of water elevations.

The FEMA Flood Insurance Study (FIS) for Cumberland County was referenced for coastal storm surge stillwater elevations for the 10%, 2%, 1%, and 0.2% annual chance coastal storm events (i.e., 10-year, 50-year, 100-year, and 500-year, respectively) (FEMA, 2024). There are 15 FEMA transects along the shoreline of Scarborough. These 15 transect are reported as having the same stillwater elevations for the four coastal storm events included in FEMA's study. See Table 3-1 for a summary of water elevations for the coastal storm events.

Table 3-1. Water Surface Elevations

“High Tide” Water Elevations (ft)		Coastal Storm Event Stillwater Elevations (ft)				
MHHW	HAT	10% - annual chance (“10-year”)	2% - annual chance (“50-year”)	1% - annual chance (“100-year”)	Max Tide	0.2% - annual chance (“500-year”)
4.6	6.5	7.9	8.5	8.8	9.3	9.5

Notes:

1. MHHW and HAT elevations from the NOAA tide gage in Pine Point (NOAA, 2024a).
2. Max Tide measured on January 13, 2024 at the NOAA tide gage in Portland (NOAA, 2024b).
3. Coastal storm event stillwater elevations for the 10%, 2%, 1%, and 0.2%-annual chance coastal storms from the FEMA FIS for Cumberland County (FEMA, 2024).

3.2 Sea Level Rise

In 2020, the Maine Climate Council (MCC) recommended sea level rise estimates for Maine communities to consider when planning and designing for flood adaptation based on a 2017 NOAA report of sea level rise projections (NOAA, 2017). The MCC recommended that Maine communities “Commit to Manage” an intermediate rate of sea level rise and “Prepare to Manage” a high rate of sea level rise (MCC, 2020). In 2022, NOAA released updated sea level rise projections, and in 2024, MCC updated their recommendations to reflect NOAA’s updated science. MCC’s new recommendations have shifted the “Prepare to Manage” timeframe 10 to 20 years into the future (MCC, 2024).

For this study, we incorporated estimates for both intermediate and high rates of sea level rise for 2030, 2050, and 2100, which includes the “Commit to Manage” recommendations for the 2050 and 2100 timeframe, as defined by the Maine Climate Council. We have referred to the high rate of sea level rise for the 2050 and 2100 timeframes as “Prepare to Manage” values within this study, although the MCC currently does not have official “Prepare to Manage” values for 2050 and 2100. The sea level rise estimates used in this study for the years 2030, 2050, and 2100 are summarized in Table 3-2.

Table 3-2. Sea Level Rise Estimates

Timeframe	“Commit to Manage” SLR Amount (ft)	“Prepare to Manage” SLR Amount (ft)
2030	0.8	0.8
2050	1.5	1.9
2100	4.0	7.4

Source: Sea level rise estimates obtained from the 2024 Update of the Scientific Assessment of Climate Change and Its Effects in Maine (MCC, 2024).

3.3 Waves

Information on significant wave heights is available from the FEMA FIS for Cumberland County (FEMA, 2024). For the 15 transects in Scarborough, Maine, the FIS lists a significant wave height of 29.9 ft for 1% annual chance coastal events. This wave height likely represents an offshore, deepwater wave height, which is likely not reflective of nearshore wave heights that have been transformed due to wave

refraction and/or diffraction as they move towards shore. Information on wave height due to coastal events that differ from the 1% annual chance coastal event is not provided by FEMA.

Wave heights acting near the shore will increase coastal flooding water levels and inundation extents through a wave runup process. In lieu of detailed wave transformation modeling, nearshore wave heights can be approximated based on water depth nearshore. However, these approximated wave heights will likely be conservative, as they represent the maximum wave height a particular depth of water can support.

The height and extents of wave runup depends on the characteristics of the shoreline where the waves are acting: a steep revetment will typically cause a higher wave runup but may reduce the inland extents of the wave action. A shallow, beach profile will have a smaller wave runup height relative to its steep counterpart, but the extent of inundation may propagate farther inland.

For this study, we will highlight where wave action is likely to occur, based on FEMA's designated Limit of Moderate Wave Action (LIMWA). The LIMWA line specifies where wave heights would be greater than 1.5 ft during 1% annual chance coastal storm events. Detailed wave modeling, including wave heights and inundation extents, are expected to become available in 2025 as part of the Maine DOT / Woods Hole Group Maine Coastal Flood Risk Model (ME-CFRM).

4. Precipitation and Streamflow

The MCC has found that Maine's climate is getting wetter overall. Maine experiences 1-2 more days per year with two inches or greater of precipitation than compared to the 1950s. Maine experiences 2-3 more days per year with one inch of precipitation than compared to the same period. However, these conclusions were drawn from data that did not necessarily include hyper-local, extreme, precipitation events. Some events, like convective thunderstorms, can drop several inches of precipitation in a small area where measurement instrumentation is not present. Additionally, it is possible to experience years with more than two additional days per year of excessive precipitation than compared to the 1950s (MCC, 2024).

NOAA Atlas 14 provides precipitation frequency estimates for recurrence intervals ranging from 1 to 1,000 years (i.e., a 100% annual chance to a 0.1% annual chance event). For Scarborough, the precipitation depth estimates provided for a 24-hour precipitation event are summarized in Table 4-1 below.

Table 4-1. 24-hour Precipitation Depth Estimates for Scarborough, Maine (inches)

1-year (100% - annual chance)	2-year (50% - annual chance)	5-year (20% - annual chance)	10-year (10%- annual chance)	25-year (4%- annual chance)	50-year (2%- annual chance)	100- year (1%- annual chance)	200- year (0.5%- annual chance)	500- year (0.2%- annual chance)	1,000- year (0.1%- annual chance)
2.61	3.23	4.23	5.06	6.21	7.06	7.98	9.10	10.80	12.30

Source: NOAA Atlas 14, Volume 10, Version 3 (NOAA, 2025).

Precipitation observations documented by the National Weather Service for the Portland Jetport indicate that there have been six precipitation events near or above 2 inches of rainfall in a 24-hour period since January 1, 2023 (NOAA, 2024c). These events are summarized in Table 4-2. Extratropical storms such as these are projected to become more intense as the climate warms. However, there is significant uncertainty as to future trends of storm frequency (MCC, 2024).

Table 4-2. Recent Extreme Precipitation Events

Storm Date	Precipitation (inches)
September 18, 2023	2.29
December 11, 2023	1.99
January 10, 2024	2.10
January 13, 2024	2.43
March 10, 2024	2.39
March 23, 2024	2.13

Source: Precipitation data measured at the Portland Jetport in Portland, Maine by the National Weather Service and reported by NOAA (NOAA, 2024c).

Increased precipitation may exacerbate flooding during coastal storm events if the events coincide. Three of the extreme precipitation events in 2024 highlighted in Table 4-1 coincided with coastal storms and extreme tides – January 10, January 13, and March 10. Drainage infrastructure during extreme coastal events can become less effective in conveying stormwater runoff from ponded areas if the infrastructure is tidally influenced, contributing to the overall flood depths and extents.

It is unknown whether peak streamflow along rivers and streams will increase in the future due to climate change. Increased precipitation will likely increase peak streamflow, but increased temperature will likely decrease peak streamflow (MCC, 2024).

Readily available information on the correlation between precipitation events, peak streamflow, and flood inundation due to freshwater sources, is not currently available for Scarborough.

5. Previous Flood Inundation Studies

In December 2023, the Woods Hole Group (WHG) published a Prouts Neck Resiliency Planning StoryMap for the Prouts Neck Environmental Planning Committee (PNEPC) (WHG, 2023a). WHG and PNEPC conducted a screening-level vulnerability assessment of roads and buildings in Prouts Neck for flood inundation caused by sea level rise and storm surge through 2100. They used sea level rise estimates based on the high sea level rise projection as provided by the 2022 NOAA projections which correspond to 1.4 ft of sea level rise by 2050 and 5.9 ft by 2100 (NOAA, 2022) and stillwater elevations from the FEMA FIS (FEMA, 2024) which was preliminary when the WHG study took place. They did not include wave action in this study. They determined that vulnerable assets in Prouts Neck included Black Point Road, structures and roads in the Lanes neighborhood, Black Rock Road, the Prouts Neck Yacht Club, and structures along Ferry Beach. They concluded that flooding at Black Point Road and Black Rock Road could impact emergency response and evacuation (WHG, 2023a).

WHG conducted additional analysis of flood inundation and wave action on the Prouts Neck Yacht Club and the Prouts Neck Beach Club, which they summarized in a June 2023 memo (WHG, 2023b). They calculated depth-limited wave heights to determine wave runoff and overtopping along the Prouts Neck Beach Club seawall, which they concluded was the cause of the observed flood inundation from the December 23, 2022 coastal storm event.

In November 2020, WHG released a Massacre Pond Investigation report. The report found that the beach and dune system of Scarborough Beach provides storm protection for Massacre Pond but is vulnerable to significant erosion and inundation at its southern end around the location of the pond culvert. The frequency of flood inundation due to coastal storm events is expected to increase with sea level rise. Drainage of the pond is limited by the culvert, which the investigation report concludes is undersized (WHG, 2020).

In April 2011, The Sea Level Adaptation Working Group (SLAWG) published a vulnerability assessment for the Saco Bay communities of Biddeford, Saco, Old Orchard Beach, and Scarborough. The assessment considered that sea levels would rise by a minimum of two feet by 2100 compared to 2010 levels. They determined that vulnerable areas included Higgins Beach, Pine Point, and areas within the Scarborough River. Their analysis indicated that up to 1,100 building footprints could be impacted, with a combined structure and land value of over \$311,000,000 (SLAWG, 2011).

A 2014 study published in the *Ocean and Coastal Management* scientific journal assessed vulnerability of coastal infrastructure due to sea level rise in Scarborough. The study utilized the same sea level rise assumptions and flood inundation scenarios as the 2011 SLAWG vulnerability assessment. The study determined that vulnerable assets in Scarborough included US Route 1 Marsh Crossing, Pine Point Road at Jones Creek, Black Point Road at Libby River, Payne Road, and the Eastern Trail, among others. The study also considered infrastructure associated with these roads, such as sewer, stormwater, energy, and communication infrastructure, to be vulnerable to flood inundation (Johnston et al., 2014).

A 2007 study by Milone & MacBroom, Inc. analyzed flood abatement options for the area along Little River/Jones Creek west of Pine Point Road (Route 9) for the Town of Old Orchard Beach (Milone & MacBroom, 2007). The study looked at eight alternatives to infrastructure modifications to alleviate flooding due to rainfall and tidal conditions, including up to 2.0 feet of sea level rise (projected to occur by 2100 at the time of this study). The area was modeled using HEC-RAS for existing conditions and for eight alternatives. The alternatives included measures such as a tide gate at Route 9, modifications to the Route 9 culvert, improved drainage systems and channel modifications, and removal of the Bayley Campground Dam. Recommendations from the study included adding a larger culverts at Route 9 and installing tide gates, adding an additional channel bypass at Route 9, adding two larger bypass culverts at the railroad crossing, and removing Bayley Campground Dam. It is important to note that since this study was completed, the projected rate of sea level rise has increased, as has the projected risk of flooding due to typical tidal conditions. As such, the use of a tide gate to limit typical tidal action would likely not be viewed favorably by environmental agencies and this option may no longer be viable.

The findings of the SLAWG report and 2014 study are based on outdated sea level rise estimates. Flood vulnerability for assets identified in these reports will be updated using new estimates as part of this study.

6. Limitations

This memo presents the data sources reviewed for use in the flood vulnerability assessment for the Town of Scarborough. The data was obtained from readily available online information, published references, and the Town of Scarborough. The purpose of this data review is to identify data availability and/or data gaps in information to be used in the flood vulnerability assessment.

The GIS data included in this study represent a snapshot in time of locations and configurations for assets, such as roads, parcels, and building footprints. The compiled data was clipped to the Town's boundaries. Elevations of asset data are based on LiDAR, proposed roadway elevations from the Route 1 and Route 9 adaptation project, and as-built survey near the Prouts Neck Beach Club. These elevations may not represent the elevation at which an asset becomes inoperable.

The sea level rise values used were recommended by the MCC (2024) and represent the latest available projections as of the date of this memo. Tidal datums are based on data from NOAA stations 8418445 and 8418150 (NOAA, 2024a,b). Coastal storm event stillwater elevations included in this study are based on the FEMA FIS for Cumberland County (FEMA, 2024). Actual tides, storm surge elevations, and rates of sea level rise will vary from what has been presented in this report.

Reuse of this report for any purposes, in part or in whole, is at sole risk of the user.

7. References

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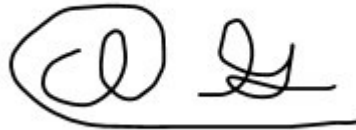
<https://storymaps.arcgis.com/stories/16d11d09fd22443c8c693866a4a8f1f6>.

Sincerely,

GEI CONSULTANTS, INC.



Leila Pike, P.E.
Project Manager



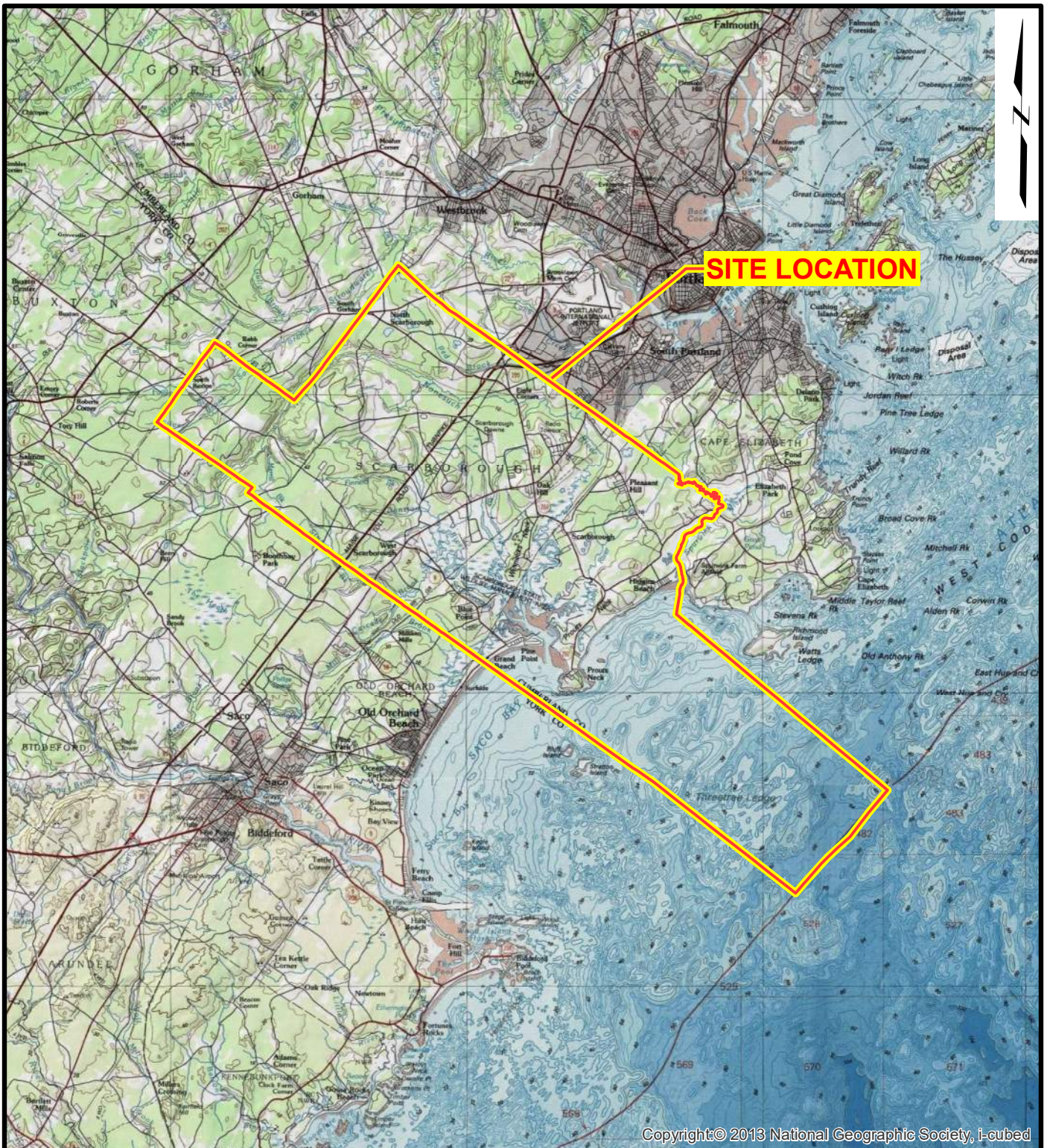
Ilan Gasko, E.I.
Staff Professional

Attachments

Figure 1	Site Location
Appendix A	GIS Data Sources

IG/LAP:bdp

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0 7,500 15,000 30,000



Feet

Flood Vulnerability Assessment
Scarborough, Maine

Town of Scarborough
Scarborough, Maine



Project 2403961

SITE LOCATION

March 2025

Fig. 1

Appendix A GIS Data Sources

GIS Asset Name	File Name	Date Accessed
Coastal Infrastructure		
Boat Launches Source: (Maine GIS, 2021)	Maine_Boat_Launches_GeoLibrary.shp https://services1.arcgis.com/RbMX0mRVOFNtDLzd/ArcGIS/rest/services/Maine_GeoLibrary_Structure/FeatureServer/1	5/30/2024
Coastal Structures Source: (Maine DACF, 2023a,b)	Maine_Coastal_Structure_and_Dune_Crest_Inventory_and_Overtopping_Potential_-_Structure_Lines.shp; Maine_Coastal_Structure_and_Dune_Crest_Inventory_and_Overtopping_Potential_-_Structure_Points.shp https://services1.arcgis.com/RbMX0mRVOFNtDLzd/arcgis/rest/services/MGS_Structure_and_Dune_Crest/FeatureServer/0; https://services1.arcgis.com/RbMX0mRVOFNtDLzd/arcgis/rest/services/MGS_Structure_and_Dune_Crest/FeatureServer/2	5/30/2024
Conservational and Recreational Assets		
Beaches Source: (Maine DACF, 2023c,d)	Maine_Beach_Mapping_Shoreline_Types.shp; Maine_Beach_Mapping_DSAS_Dry_Beach_Width.shp https://services1.arcgis.com/RbMX0mRVOFNtDLzd/ArcGIS/rest/services/MGS_Beach_Mapping/FeatureServer/0; https://services1.arcgis.com/RbMX0mRVOFNtDLzd/ArcGIS/rest/services/MGS_Beach_Mapping/FeatureServer/3	6/6/2024
Parks and Open Spaces Source: Town of Scarborough	ProtectedProperties.shp Micah Warnock, Town of Scarborough GIS Administrator	6/4/2024
Sand Dunes Source: (Maine DACF, 2024a,b)	Maine_Sand_Dune_Boundaries.shp; Maine_Sand_Dune_Erosion_Hazard_Areas.shp https://services1.arcgis.com/RbMX0mRVOFNtDLzd/ArcGIS/rest/services/MGS_Beaches_and_Dunes/FeatureServer/1; https://services1.arcgis.com/RbMX0mRVOFNtDLzd/ArcGIS/rest/services/MGS_Beaches_and_Dunes/FeatureServer/2	6/4/2024
Walking Trails Source: Town of Scarborough	Walking_Trails.shp Micah Warnock, Town of Scarborough GIS Administrator	6/5/2024
Wetlands Source: (USFWS, 2024)	HU8_01060001_Wetlands.shp https://fwsprimary.wim.usgs.gov/wetlands/apps/wetlands-mapper/	6/4/2024
Drainage Infrastructure		
Catch Basins Source: Town of Scarborough	CatchBasins.shp Micah Warnock, Town of Scarborough GIS Administrator	6/4/2024
Culverts Source: Town of Scarborough	DrainageCulverts.shp Micah Warnock, Town of Scarborough GIS Administrator	6/4/2024
Dams Source: (MEMA, 2024a)	Maine Dams.gdb https://services1.arcgis.com/0MSEUqKaxRIEPj5g/arcgis/rest/services/Dams_in_Maine/FeatureServer	6/12/2024
Detention Ponds Source: Town of Scarborough	Detention_Ponds.shp Micah Warnock, Town of Scarborough GIS Administrator	6/4/2024
Outfalls Source: Town of Scarborough	outfalls.shp Micah Warnock, Town of Scarborough GIS Administrator	6/4/2024
Outlet Control Structures Source: Town of Scarborough	outlet_control_structures.shp Micah Warnock, Town of Scarborough GIS Administrator	6/5/2024

GIS Asset Name	File Name	Date Accessed
Public Safety		
DEP Registered Tanks Source: (Maine DEP, 2019)	MaineDEP_Registered_Tanks.xml https://gis.maine.gov/arcgis/rest/services/dep/all_registered_tanks/MapServe	5/30/2024
DEP Remediation Sites Source: (Maine DEP, 2023)	MaineDEP_Remediation_Sites.xml https://gis.maine.gov/arcgis/rest/services/dep/Remediation_Sites/MapServer/0	5/30/2024
Evacuation Routes Source:	File created by GEI based on source data (MEMA, 2024b) https://storymaps.arcgis.com/stories/4fb502bf0ea6467693ff4191a1859e92	6/5/2024
Fire Hydrants Source: Town of Scarborough	Hydrants.shp Micah Warnock, Town of Scarborough GIS Administrator	6/4/2024
Streetlights Source: Town of Scarborough	Streetlights.shp Micah Warnock, Town of Scarborough GIS Administrator	6/4/2024
Wells Source: (Maine DACF, 2024c):	MGS_Wells.shp https://services1.arcgis.com/RbMX0mRVOFNTdLzd/ArcGIS/rest/services/MGS_Wells_Database/FeatureServer/0	5/30/2024
Sewer Infrastructure		
Manholes Source: Town of Scarborough	ssManhole.shp Micah Warnock, Town of Scarborough GIS Administrator	6/4/2024
Pump Stations Source: Town of Scarborough:	ssPumpStations.shp Micah Warnock, Town of Scarborough GIS Administrator	6/5/2024
Structures/Buildings		
Municipal Property Source: Town of Scarborough	ProtectedProperties.shp Micah Warnock, Town of Scarborough GIS Administrator	6/4/2024
Parcels Source: Town of Scarborough	Parcel_Poly.shp Micah Warnock, Town of Scarborough GIS Administrator	6/4/2024
Structures Source: Town of Scarborough	Structures.shp Micah Warnock, Town of Scarborough GIS Administrator	6/4/2024
Transportation Infrastructure		
Bridges Source: (Maine DOT, 2021a)	MEDOT_Bridges.shp https://www.maine.gov/geolib/catalog.html	10/12/2022
Railroads Source: (Maine DOT, 2021b)	railroads.shp https://gis.maine.gov/arcgis/rest/services/dot/MaineDOT_OpenData/MapServer/33	5/30/24
Roads Source: Town of Scarborough	Roads_911.shp Micah Warnock, Town of Scarborough GIS Administrator	6/4/2024
Sidewalks Source: Town of Scarborough	Sidewalks.shp Micah Warnock, Town of Scarborough GIS Administrator	6/4/2024